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Critical thinking: a primer for Chemistry teachers and academics

Roxana S. Timofte

Presa Universitară Clujeană

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FOREWORD

The aim of writing this book was to offer a support to Chemistry teachers and academics in their endeavors to foster students' critical thinking. The theoretical information was presented in an accessible way, while the focus was on offering models for learning objectives, class activities and evaluation methods. The main questions to which I intended to answer by writing this book were:

- 1) How can critical thinking be fostered and evaluated in Chemistry field?

and

- 2) Are Romanian teachers prepared to create the appropriate environment and use the right pedagogies, to develop students' critical thinking?

It is well-known that the employers are searching for graduates which master 21st century skills. However, what skills Romanian students think that they must have, in order to be employed? In Chapter 1 is reported an empirical study regarding students' perception of the skills necessary for obtaining and maintaining a job in 21st century.

Chapter 2 has two parts: in the first part critical thinking is defined and in the second part is presented a study regarding students' perception of critical thinking.

Are the Romanian teachers ready to use the adequate pedagogies in order to foster critical thinking? What is expected of them, according to the curriculum for the exam to become a grade 2 professor? In Chapter 3 I sought to provide an answer to the above questions, by analyzing the Chemistry and Chemistry didactics topics which must be prepared by teachers for the exam to become a grade 2 professor.

In Chapter 4 were presented strategies which could be used to foster critical thinking in Chemistry class. In Chapter 5 were presented examples of items which could be used to evaluate domain-specific critical thinking.

A curriculum centered on crosscutting disciplinary concepts and 21st century skills may create the perfect environment for students to grasp the essence of a discipline and develop the skills needed nowadays. In Chapter 6 were provided examples of learning objectives, small sequences of teaching activities, as well as some techniques for evaluation of 21st century skills.

The Author



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